DOCUMENT RESUME

ED 206 134 EC 133 588

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TITLE Families and Their Learning Environments for Deaf Children: A Theoretical Position.
PUB DATE Apr 81
NOTE 21p.: Paper presented at the Annual Meeting of the American Educational Research Association (Los Angeles, CA, April 13-17, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Affective Behavior; *Deafness; *Family Environment; Family Influence; Personality; *Theories

ABSTRACT

The paper describes a theoretical framework for the study of cognitive and affective behavior of deaf children that relates social-psychological family variables and global classificatory variables to children's outcomes. An interactionism framework assuming that behavior is the result of continuous interaction between persons and the situations they encounter in their environment comprises the conceptual position. A review of theoretical positions constructed by K. Lewin in his field theory of personality, by H. Murray's work on the development of personality, in K. Marjoribanks' reanalyses of much family environment research, and finally, an analysis of the past research of deaf children and the current state of the art guide for this theoretical framework. (Author)

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Families and Their Learning Environments for Deaf Children: A Theoretical Position

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Paper presented at the annual meeting of the American Educational Research Association, Los Angeles, April 13-17, 1981.

EC133588

Introduction

Family environment is one of the most pervasive influences on a child's behavior. Only recently has research begun to provide information on how specific characteristics of the family affect the development of a child's cognitive abilities and affective characteristics. Family environment research becomes more sensitive and valid and holds greater promise of having diagnostic value for the policy-maker or practitioner when both global classificatory variables, such as social-status indicators, and refined social-pyschological measures, such as a parent's aspirations for the child, have been examined in relation to the child's behavior.

Family environment research of this nature does not exist in the literature on the development of hearing impaired children's cognitive and affective behaviors. It is argued here that the inclusion in the family of a child with early profound deafness has an impact on those aspects of the family environment that in turn influence the deaf child's school achievement. Thus, the hearing impaired child experiences a different family learning environment than does a child who is hearing.

The notion of the impact of childhood deafness on the family is not new. The literature clearly describes the struggles of hearing parents of deaf children whose experiences of uncertainty and frustration lead them to suffer great anxiety and sorrow (e.g., Gregory, 1976). Meadow and Trybus (1979) very succinctly introduce the problem. They propose that the prevalence and the nature of emotional/behavioral disturbances in deaf children suggest that the impact of deafness on the home environment is significant and creates patterns of parental behaviors detrimental to the child's development.

Theoretical Framework

A review of the theoretical positions constructed by Lewin (1934), Murray (1938) and Bloom (1964) form the conceptual basis for this research. Lewin and Murray's work in the area of personality stressed the need to understand behavior (B) as an outcome of the relationship between the person (P) and his/her environment (E), or B=f (P,E). Murray further proposed that an environment should be classified as harmful or beneficial as it affects the person. The directional tendency of the environment implied in Murray's framework is called the press of the environment and has both a qualitative and quantative aspect. Bloom provided much of the impetus for educational research on family social-psychological environments. He suggested that the total environment surrounding an individual may be defined as being composed of several sub-environments. To understand the development of a particular characteristic, then, the research task is to identify and measure that sub-environment of press variables which potentially is related to the characteristic.

The family environment research in the educational literature drawing from this theoretical position and suggested as having the most bearing on the study of the family environments of deaf children is the work done by Dave (1963), Wolf (1964), Hess et. al. (1968) and Marjoribanks (1979). Throughout their analyses, it is shown that there exists a complex network of interrelated family environment variables that are associated with children's outcomes. These include social-psychological process variables such as the parents' educational and occupational aspirations for the child, the parents' aspirations for themselves, and their concern for the use of and development of language in the home, as well as family structure

characteristics (family size and birth order) and measures of social status and ethnicity. Further, the family environment variables which are related to children's school performance are associated also with the psychological or "person" variables of the children, such as the individual child's intelligence, attitudinal and personality characteristics and prior academic achievement levels.

The current issue raised by most of the research with deaf children over the years has dealt with the origin of the behavior, e.g., almost all studies find a three to four year lag in educational achievement, argued in terms of the relative contribution of linguistic and communicative deficit within the child. Only recently has interest by some researchers in the behavior of mothers of deaf children and mother-child interaction (e.g., Schlesinger and Meadow, 1972; Altman, 1973; Greenberg, 1980) represented a move beyond the deficit trait model toward a more developmental view of behavior. That is, rather than assigning the "aberrant behavior," whatever it is, to a trait within the child, these researchers are examining the conditions which appear to correlate with or to be antecedent or consequent to various patterns of optimal or minimal development. For example, it has been found that mothers of deaf preschool children with fewer communicative skills are more likely to appear inflexible, controlling, didactic and disapproving while their children appear to be less happy and to enjoy the interactions with their mothers less (Schlesinger and Meadow, 1972).

Apart from the studies focusing primarily on mother-child interaction represented best by the work of Schlesinger and Meadow (1972) and those investigating "segments" of the family environment (e.g., Greenberg, 1980),

there has been virtually no effort to systematically observe the impact of a deaf child on the family. Gregory (1976) provides an intriguing account of family experiences with young deaf children in England but we are left with questions of relationships, i.e., what specific aspects of the family environment seemed to be related to specific aspects of the child's behavior. Because of a lack of information about the relationships between deaf children and the family learning environment, explanations of differences found between deaf children with hearing parents and deaf children with deaf parents must be made cautiously (Moores, 1978). For example, the consistent finding that deaf children with deaf parents are superior to deaf children with hearing parents in academic achievement, social development and English language abilities (e.g., Meadow, 1968) cannot be attributed to the parents use of sign language alone. Other contributing factors might be: reduction of the traumatic reaction to deafness that affects the parents' relationship to the child, and the likelihood that deaf parents interact with their deaf children without experiencing any "special" handicapping conditions and can, therefore, carry on a more typical family life.

It is suggested that the family environment research examining the relationship between social-psychological family environment variables, social status indicators, family structure variables and children's behavior holds promise as a model for the study of deaf children and their family learning environments and fills a void regarding how we might conceptualize the effects of the handicapping condition on the cognitive and affective behaviors of the deaf child. On the basis of the literature, it is suggested that the social-psychological environment for deaf children relevant to academic achievement should consider the parents' integration of "deafness" into the

home as a press variable. The thrust of this theoretical framework is toward conceptualizing the state of early profound hearing impairment as a discrete array of experiences (interactions between person and environment) and patterns of experience that can be examined in relation to the effects they have on the deaf child's behavior.

Literature Review

A review of studies over the past twenty years on the learning, teaching and curriculum of the schools and the achievement, interest and attitudes of the students, shows that the major variable explaining much of the variation in the learning of the students is their home environment. Differences among the teachers and among schools are relatively small when compared to the differences among the home environments (Bloom, 1974; Coleman, 1966; Plowden, 1967). In the United States, it has been found that the most effective early childhood education programs are those which help the parents to provide support and encouragement to their children. Early school programs which emphasize language develoment, "learning to learn" skills, and motivation to learn have been successful but not to the extent of similar programs which also include parent support (Bronfenbrenner, 1974).

Recently, large numbers of studies have attempted to alter some of the home environment "components." Various methods have been used: home visitors, special courses for parents, parent involvement in the school, and the provision of special materials to be used by parents with their children. This research established that many of the home environment processes can be altered by parents and that the effects of such changes

on the children's school achievement are very great (Bronfenbrenner, 1974).

Research on the Home Environment

Much of the research on the relation between home environment and school learning has been sociological in nature. These studies grouped children on the basis of the education and occupation of the parents, their social class or socio-economic status, and their race or ethnicity and then related these classifications to the educational achievement of the children in school. Although these studies demonstrate some overall (low to moderate) relations between these classifications and achievement, they are not very helpful to educators or parents because they lack specific information as to what to do to improve the learning of particular children.

Demographic studies of families of hearing impaired children reveal the following trends in the population of students in programs for the hearing impaired across the United States. Parents of deaf students are disproportionately represented in the lower income categories. Higher income students are less likely to have become hearing impaired after birth and are more likely to have a "white" ethnic background, to have attended preschool and to use hearing aids. Higher income students have more intelligible speech and use more speech in communication than lower income students. Parental income was related to the school program placement in which the students enrolled; as income increased, attendance in residential schools decreased. Finally, as income increased, there was also a corresponding tendency towards higher academic achievement (Jensema, 1977). Jensema, (1975) earlier reported strong relationships between academic achievement test scores and age of onset of hearing loss, the cause of the loss, the degree of the loss, ethnic background, additional handicapping conditions and type of special

education programs. Rawlings (1977) compared families with hearing impaired children and families in the general population and found that families with hearing impaired children tended to be larger; fathers of hearing impaired children tended to be less well educated and had a higher (slightly) representation in the occupational category of "service worker." A higher percentage of mothers of hearing impaired children were not in the labor force.

Although these relationships are of great interest, it is difficult to translate this classificatory information into recommendations for more appropriate and effective educational programs for deaf children. Many important differences among environments are obscured by a general socio-economic status index just as IQ obscures differences among individuals.

A somewhat different approach to the study of the effects of the home environment on school learning among children in the general poplulation emerged during the early 1960's. The premise of this research was that it is what the parents do rather than their status that accounts for the learning development of their children.

The research work by Dave (1963); Wolf, (1964); Hess et. al. (1968); Marjoribanks (1979) and others following some of the guidelines offered by Bloom, (1964) as well as earlier research (Kahl, 1961; Rosen, 1959; Fraser, 1959; Burks, 1928) drew on the theoretical framework of the environment described in a previous section of this paper to develop their approach to the measurement of environments. The following four steps detail this research methodology (Wolf, 1966):

1) A single physical environment (e.g., the home) may be made up of a number of sub-environments, with each sub-environment operating to

influence the development of specific characteristics, such as academic achievement and intelligence.

2) Environmental variables are measured that are hypothesized to, in all likelihood, directly influence the development of particular characteristics; what parents do in their interactions with their children was investigated rather than parental status, level of occupation, education and so forth.

3) Environmental data are summarized and treated through the use of psychometric procedures. A variety of the processes and conditions in the home environment that were hypothesized to be related to a characteristic are sampled and summarized in order to describe the environment. This is essentially the same procedure as using a number of test items to describe a student's competence in a subject.

4) Measurement of the environment is systematically related to measurements of the individual in order to give full meaning to the data about individual characteristics.

On the basis of the literature, Dave (1963) hypothesized that the home environment relevant to educational achievement might be studied in terms of the following environmental variables;

1. Achievement press
2. Language models
3. Academic guidance and support provided by the parents
4. Work habits of the family
5. Activeness of the family
6. Intellectuality in the home

These variables were each broken down into specific process characteristics which defined and delineated the variable; then sets of interview questions were constructed for each characteristic. A list of the process variables along with their process characteristics follows.

1. Achievement press
   a. parental aspirations for the education of the child
   b. parents' own aspirations
   c. parents' interest in academic achievement
   d. social press for academic achievement
   e. standards of regard for educational attainment
   f. knowledge of the educational progress of the child
   g. preparation and planning for the attainment of educational goals

2. Language models
   a. quality of the language usage of the parents
   b. opportunities for the enlargement and use of vocabulary and sentence patterns
   c. keeness of the parents for correct and effective language usage

3. Academic guidance
   a. availability of guidance on matters relating to school work
   b. quality of guidance on matters relating to school work
   c. availability and use of materials and facilities related to school learning

4. Activeness of the family
   a. the extent and content of the indoor activities of the family
   b. the extent and content of the outdoor activities during weekends and vacations
   c. use of TV and such other media
   d. use of books, periodical literature, library and such other facilities

5. Intellectuality in the home
   a. nature and quality of toys, games, and hobbies made available to the child
   b. opportunities for thinking and imagination in daily activities

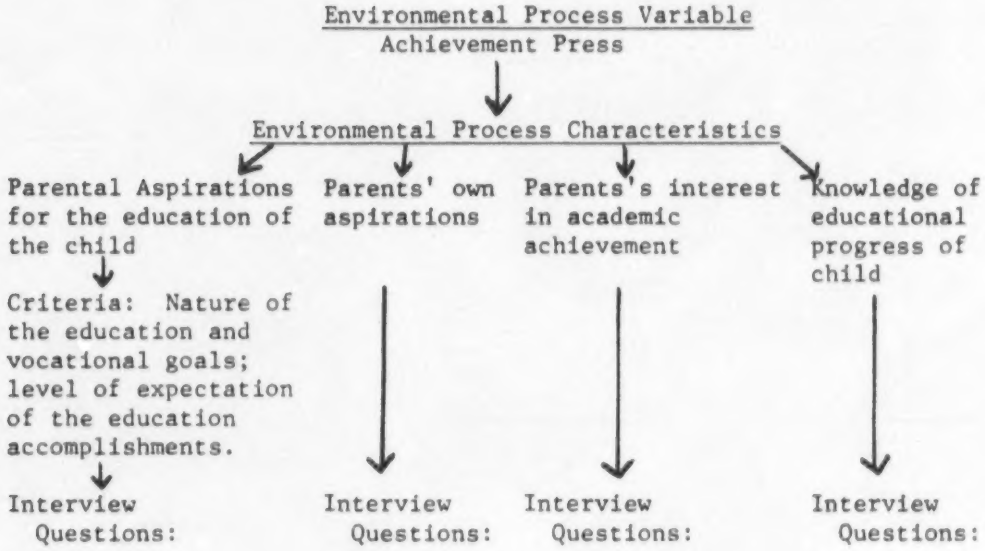
6. Work habits in the family
   a. degree of structure and routine in the home management
   b. preference for educational activities over other pleasurable things

Also, on a nine point scale, ratings were made on the basis of interview and observational data for each characteristic following specified criteria for evaluation. The general procedure for the development of the interview questions

is depicted in Figure 1 for the Achievement Press.

Figure 1

Procedure for Development
of Interview Schedule


Environmental Process Variable
Achievement Press
Environmental Process Characteristics
Parental Aspirations for the education of the child
Parents' own aspirations
Parents's interest in academic achievement
Knowledge of educational progress of child
Criteria: Nature of the education and vocational goals; level of expectation of the education accomplishments.
Interview Questions:
Interview Questions:
Interview Questions:
Interview Questions:

When an overall index of the home environment was correlated with the results of a fourth grade battery of achievement tests (Metropolitan) the relationship was found to be very high (+.80). Generally, the correlations were highest with tests of word knowledge and lowest with spelling and arithmetic computation. These results suggest that the home has greatest influence on language development of the child and his general ability to learn and least influence on specific skills primarily taught in school such as spelling and arithmetic computation.

This approach to the study of the home environment - which is more predictive of school achievement than is an IQ test - makes it obvious that parents with different levels of education, income or occupational status can provide stimulating home environments which encourage and support the

child's learning. Dave and Wolf found the relationship between parents' status and these interactive processes to be relatively low. Their research demonstrates that it is what parents do in the home, rather than their status characteristics, that determines the home environment. The Dave (1963) and Wolf (1964) studies have been replicated in a number of other countries and cultural settings with very similar findings (e.g., Marjoribanks, 1979; Dyer, 1967; Kellaghan, 1977). In addition, the research that followed built on their approach and further developed and refined their conception of the environment.

Perhaps the most complete presentation of the major research in family environments and children's academic and cognitive behavior has been done by Marjoribanks (1979). Over the years research on family environment and learning has resulted in increasingly more precise outcomes as it moved beyond using the primarily social-economic status indices to represent the home environment. At the same time, however, many of the studies have been limited by restrictions in methodology, (e.g., small samples, samples from only one ethnic group, single sex samples) and statistical techniques. Marjoribanks described the effects of these limitations and reviewed studies, including his own extensive work, that have attempted to go beyond these restrictions in an effort to achieve even more accurate observations of the interactions and characteristics of the family environments that account for children's academic and cognitive behavior.

Research has used refined family environment measures to investigate the relationship between family environment and intelligence (e.g., Marjoribanks, 1972), family environment and children's affective characteristics, e.g., self-esteem, achievement motivation and values (e.g., Weiss, 1969), and

family environment and measures of both cognitive and affective characteristics (e.g., Keeves, 1972; Marjoribanks, 1979). Generally, the environment measures constructed for this research were successful in accounting for variation in academic achievement scores but less so in explaining variance in non-verbal, personality and school-related affective measures. In many of the studies the construct validities of the family environment measures have been examined by testing the proposition that family environment measures account for more of the variance in children's cognitive and affective scores than other environment measures such as social-status characteristics and family structure variables. Typically, it has been found that the classificatory measures are relatively poorer predictors of children's behavior when compared with the more refined parent interview measures.

Given this proposition, further studies suggeseted that family environment research becomes even more sensitive and valid when children's cognitive and affective scores are related to both global social environment variables (social-status, ethnicity, sibsize, birth order, age spacing) and refined social-psychological family environment measures. In the next few paragraphs, descriptions of several studies representing that proposition are provided.

Wanting to test for possible interaction and curvilinear relations between the variables, Marjoribanks (1979) used a regression model to generate regression surfaces to examine the proposition that family social status is related to children's school-related outcomes at different levels of refined family environment measures. Included in the results of the regression surface analyses was the finding that at each social status

level, increases in family environment are associated with sizeable increases in intelligence and also English achievement scores; and at each level of family environment, changes in social status are associated with changes in English achievement. These results indicate the importance of considering both social status and social-pyschological family environment measures for a more complete understanding of the variation in children's school related behavior. Similar analyses of the effects of sibling variables (sibsize, age spacing, birth order) on intelligence and achievement scores indicate that when the complexities of sibling variables are recognized (e.g., amount of teaching by older child to younger siblings), then they can be meaningful indicators of family environments and should be integrated into the research.

Ethnicity is a significant variable to be taken into account when examining relations between family environments and children's school-related characteristics. Marjoribanks' (1979) findings suggest that: 1) within different social status groups there are significantly different socialization processes operating to influence children's academic achievement and, 2) for lower social-status families, ethnicity has a pervasive affect on the learning environments that families structure for their children.

In an attempt to examine how persons (person variables) and situations (family environments) both contribute (interact) in influencing behavior, B=f (P,S), Marjoribanks (1979) investigated the relations between five person variables and children's cognitive achievement, at different levels of family environment. The person variables include: intelligence, self-expectations, school-related attitudes, personality and prior academic achievement. In the analysis involving prior academic performance, relations were investigated

between two measures of reading achievement, assessed four years apart, and the intervening family environment. This study comes closest to exemplyfying the interactionist model of the person, which was Marjoribanks' primary interest in the study as it assumed that early reading performance influences the family environment and that these person and situation (family environment) variables interact to influence later performance. Regression surface analysis was used to examine the relations: early reading achievement, family environment and later reading achievement, within different social status groups. Generally, the findings suggested the following: 1) for children with low initial reading levels, increases in the quality of the intervening family environment are not associated with significant changes in later reading performances; 2) at any initial reading level, children who experience a poor intervening family environment show a decline in their later reading achievement, relative to the performance of other children; and 3) children with high initial reading scores either maintain or increase their relative position in reading achievement, with respect to other children, if they experience an enriched intervening family environment. The findings show that the family environment variables which are related to children's school performance are related also to the psychological or "person" characteristics of the children. The findings also provided evidence to support the claim that both sex and social status are important variables to be included in analyses of the correlates of cognitivedevelopment.

The final study reviewed here will be Marjoribanks' (1979) path analytic study which brought together many of the variables discussed above. He examined the effects of parents' socialization influences (social-psychological family environment) on English children's achievement and

affective outcomes when measures of social status, previous achievement, intelligence, peer-group orientations, and teacher attitudes are included in the analysis. In summary the simple correlations replicate much prior research showing that academic achievement scores generally have moderate to high relations to parents' aspirations, literacy of home and parents' initiative. Rather than trace through the many paths in the model, Marjoribanks presents general patterns of findings. Only one will be discussed here relating to academic achievement.

The dominant variables influencing academic achievement were intelligence, reading and parents' aspirations, with teacher attitudes operating for the younger (7 year old) group. For 8 and 11 year olds, reading was a relatively more important influence on the academic outcome in the girl's samples, while intelligence and parents' aspirations were more important variables for boys than for girls.

The findings reported above identified a set of environmental correlates of children's performances and suggest that any appreciable changes in performances will require greater adjustments in the environments that surround children than those attempted in most educational research projects to date. It is also clear that no assumptions can be made about children's family environment merely on the basis of social status, ethnic group classification or family structure.

The theoretical framework that has been applied in the research reviewed in this paper holds that the home consists of a number of sub-environments consisting of social and psychological conditions and interactions operating to influence the development of specific characteristics. The researcher's task is to identify and measure those aspects out of the total

environment that are likely to be related to the development of selected characteristics.

In order to apply this theoretical framework to the study of the family environments of deaf children, the task of identifying those aspects of the environment influenced by having a deaf child in the family must be addressed. In other words, it is hypothesized that additional and different parent-child interactions and conditions exist in a family with a deaf child which have a significant effect on the child's school learning.

On the basis of the literature (Schlesinger and Meadow, 1972; Gregory, 1976; Stinson, 1974; Meadow, 1967; 69; Greenberg, 1980) it is suggested that the home environment relevant to educational achievement of a deaf child might be studied in terms of the environmental process variables identified by Dave and Marjoribanks plus an additional variable called, parents integration of "deafness" into the home.

This variable can be broken down into specific process characteristics which define and delineate the variable as follows:

Parental integration of "deafness" into the home

a. the nature of the reaction to deafness is one of "acceptance"
b. the parents are informed about the child's hearing loss and development of his/her residual hearing
c. parents' interest in communicating with their deaf child
d. parents' interest in deaf community and culture
e. parents' child-rearing orientation re: supervision and discipline

Following previous research methodologies, these five process characteristics should yield the additional interview questions presented to the families of hearing impaired children that would provide a sample of the conditions and interactions in the home that are influenced by the child's deafness and have an impact on his school learning. Finally, it is suggested that research on the family learning environments of deaf children might apply

those statistical procedures described by Marjoribanks (1979) and others in their efforts to achieve more accurate predictions of the child's academic achievement based on home environment data.

Summary

The theoretical framework proposed for the study of the family environments of hearing impaired children relative to their academic achievement derives from both press-needs theory and a social learning theory of family environments. The home environment, out of all possible environments, offers the first and most consistent influence on the academic achievement of young children. Research methodology based on the conception that specific environments develop specific characteristics, has provided information on how specific conditions and interactions in the home affect the child's cognitive growth and adaptation. This research methodology has measured what parents do with their children as well as the family's socio-economic status in relation to the child's school learning. Family environment research of this nature does not exist in the literature on the deaf child's academic achievement. In addition to the typical family environment variables that are measured, consideration must be given as to how the deafness of the child is integrated into the home; and this is then incorporated into the measurement procedures. It is proposed that research with deaf children based on these theoretical formulations holds promise for practical application for teachers and parents.

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